

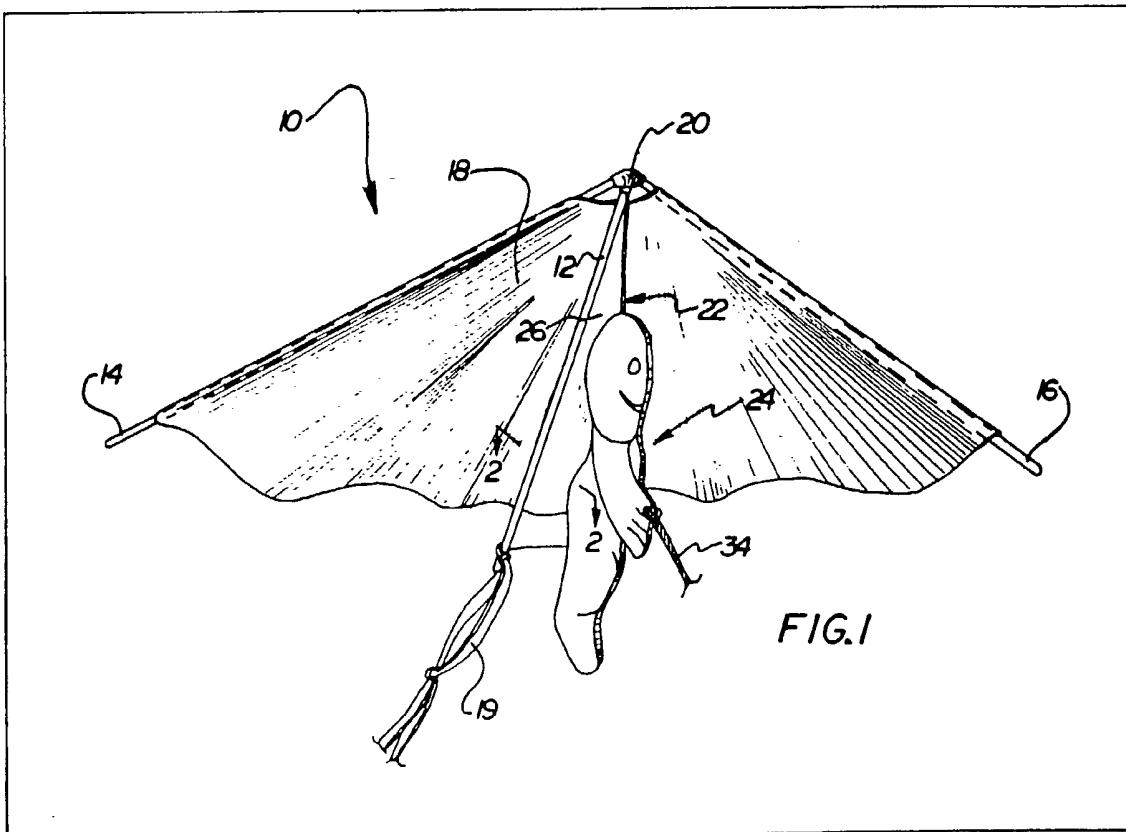
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(54) Kite with rigid display hull and
flexible camouflaged keel

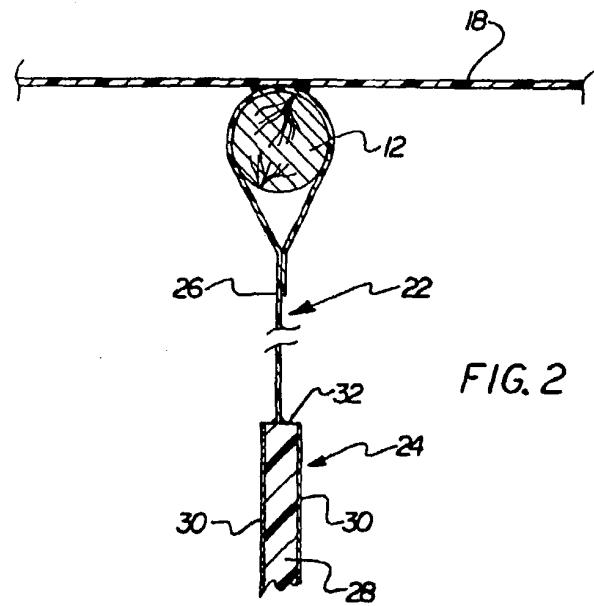
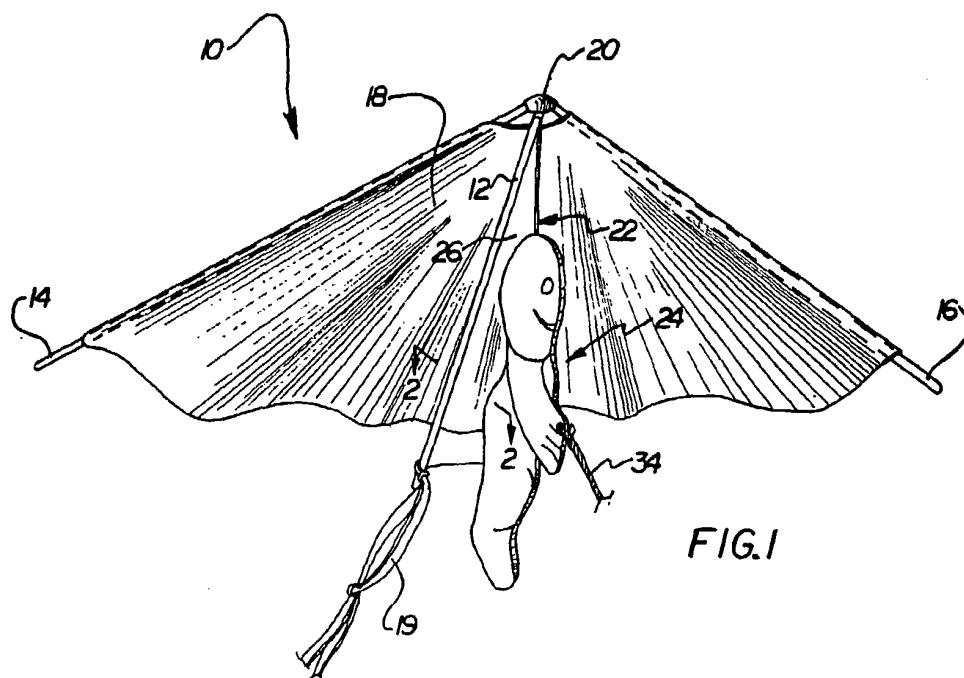
(57) A kite which is designed to create a novel visual impression when viewed by ground observers. The kite has a rigid hull 24, which depicts an object or image, and is coupled to the lift body 18 by a camouflaged, flexible keel 22, which minimizes its visibility to a ground observer, and creates the visual impression of the object or image depicted by the hull being free floating, or hang-gliding, beneath the lift body. The keel 22 may be of transparent material and the hull 24 may comprise a foam core with paperboard side surfaces.



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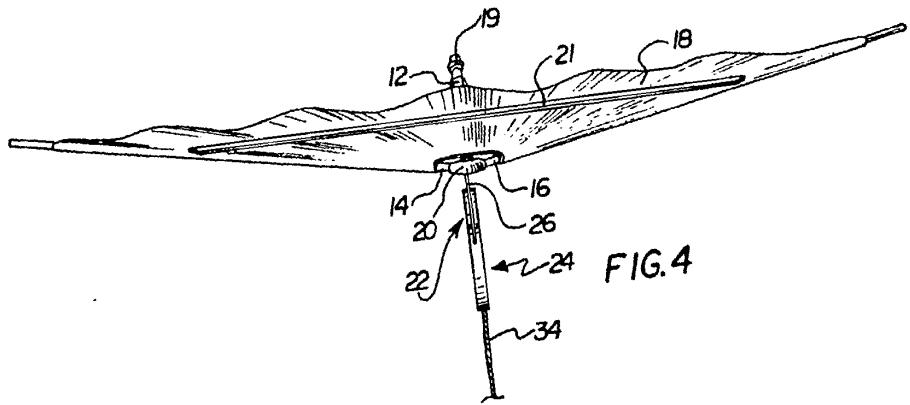
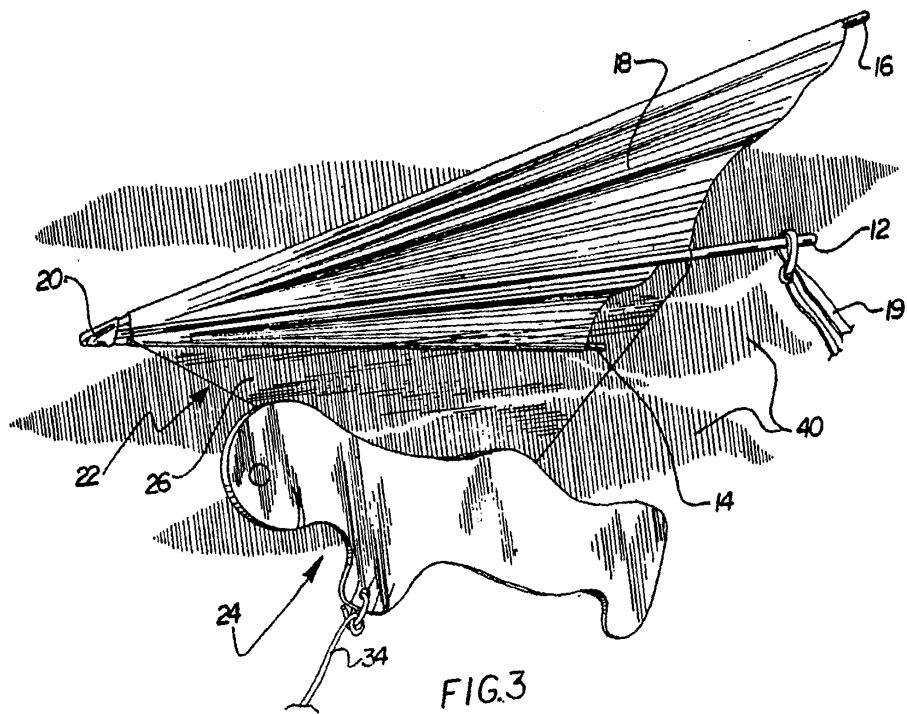
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SPECIFICATION

Kite with rigid display hull and flexible camouflaged keel

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Background of the invention

This application relates to a kite which is designed to create a novel visual impression to ground observers. Specifically, it relates to a kite which has a lift body, and hull, which depicts an object or image, coupled to the lift surface by a camouflaged, flexible keel, which minimizes its visibility to a ground observer, and creates the visual impression of the object or image depicted by the hull being free floating, or hang-gliding, beneath the lift body.

In the art there are various examples of kite constructions with keel and/or hull type structures coupled to the lift body. For example, in U.S. Patents 2,744,702 and 3,305,197 a horse-shaped figure is coupled directly to the lift body so that the horse-shaped figure appears to have wings. In other kite structures, shown in U.S. Patents 713,381; 3,347,500 and 4,018,407 a kite structure has a flexible keel depending from the lift body and some form of plate or rigid bar member at the distal end of the flexible keel for coupling the kite with a string.

Summary of the invention

According to the invention a kite includes a hull in the form of an image or other object, and the hull is coupled to the kite's lift body by means of a flexible keel which is camouflaged to minimize its visibility to a ground observer. Thus, when the kite is in flight the image or object depicted by the hull appears to a ground observer to be floating freely, or hang gliding beneath the lift body. The kite of the invention creates a particularly interesting visual impression when the hull depicts a figure, because the figure appears to be hang gliding beneath the lift body.

In the preferred embodiment, the hull comprises a planar member configured into the outer shape of the image or object which it depicts, and has marking printed, painted or otherwise formed thereon to complete the image or object. The hull is coupled to a center strut of the kite's lift surface by means of a keel which comprises a sheet of transparent, flexible material. The transparent, flexible keel is essentially invisible to a ground observer, so that from the ground, the image or object appears to be free floating beneath the kite's lift body.

Brief description of the drawings

The further objects and advantages of the present invention will become further apparent from the following detailed description taken with reference to the accompanying drawings wherein:

Figure 1 is a perspective view of a kite constructed according to the invention as it might be seen by a ground observer positioned substantially underneath it;

Figure 2 is a fragmentary cross-sectional view of the kite of *Figure 1*, taken from the direction 2-2 and showing a part of the flexible keel and hull of the kite

according to the invention;

Figure 3 is another perspective view of the kite of the invention in flight, taken from a more sidewise perspective than *Figure 1*, and further depicting the camouflage coupling between the hull and the kite's lift surface; and

Figure 4 is yet another perspective view of the kite of the invention taken from the front of the kite, and while the kite is in flight.

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Detailed description of the preferred embodiments

As seen from *Figure 1*, the kite of the invention has a lift body shown generally at 10 and includes a frame which includes a central strut 12, and a pair of side struts 14, 16. The central strut 12, and the side struts 14, 16 are preferably solid wood members, or hollow plastic members. The side struts 14, 16 are connected with the leading end of the central strut 12, and extend laterally, and rearwardly at acute angles, to the central strut 12. A lift surface 18 is made of any suitable fabric, and has portions which extend laterally, and in opposite directions from the central strut 12, and are coupled with the side struts 14, 16. A tail 19 is secured to the rear end of the central strut 12, for balancing purposes.

The central strut 12 and the side struts 14, 16 may be coupled together by any suitable means such as a nose portion 20 which maintains the central strut 12 and the side struts 14, 16 in the foregoing orientation. Further, the ends of the lift surface 18 may form sleeves which surround the side struts 14, 16 for coupling the lift surface 18 with the side struts 14, 16. Further, mechanical means such as staples, clips or tape, or suitable adhesive means, may be used to secure the lift surface 18 to the side struts 14, 16. Also, a cross strut may be provided, as shown at 21 in *Figure 4*. The cross strut 21 would extend between the side struts 14, 16 and provide additional stability to the frame.

The kite 10 also includes a flexible keel 22 depending from the central strut 12, and a hull 24, formed into a display object or image, connected to the distal end of the flexible keel 22. The flexible keel 22 comprises a sheet of thin transparent plastic 26 which is coupled to the central strut 12, and designed to depend downwardly therefrom when the kite 10 is in flight. The sheet 26 can be formed of any transparent, flexible material such as polyvinylchloride, polyethylene, polypropylene, etc. Preferably, one end of the sheet of plastic is formed into a loop and sealed to itself (by heat sealing) to form a sleeve surrounding the central strut 12 (see *Figure 2*). As seen by *Figure 2*, the sleeve is adhesively bonded to the lift surface 18. In assembling the kite, the central

strut 12 can then be inserted into the sleeve, and coupled to the side struts 14, 16 through the nose portion 20. If needed, additional mechanical means such as staples or tape can be used to further secure the lift portion 18 of the kite to the central strut 12. It is also contemplated that, rather than adhesive, mechanical means (e.g., staples, clips or tape) may be used to couple the sleeve formed by the flexible sheet 26 to the central strut 12.

Referring particularly to *Figures 1 and 2*, the hull 24 is a planar structure including a foam core 28 and

a pair of paperboard side surfaces 30. The planar hull 24 is configured with the outline of the image or object, and the paperboard side surfaces 30 have features of the object or figure painted, printed or otherwise formed thereon. Thus, the hull 24 is planar, and has the display image or object on its opposite major side surfaces.

The hull 24 is coupled to the distal end of the flexible keel 22. As seen from Figure 2, the hull 24 has an upper edge 32 bonded to the distal end of the flexible keel 22. Thus, when the kite is in flight, the hull 24 will depend downwardly from the flexible keel 22. As seen from Figures 1 and 3, a kite string 34, of conventional nature, is connected to the hull 24. In accordance with the principles of this invention, the flexible keel 22 is designed in such a manner that it is camouflaged so as to minimize its visibility when the kite is in flight. According to the preferred embodiment, this camouflaging is provided by constructing the keel 22 out of transparent plastic. As seen from Figure 3, when the kite is in flight, and is viewed from one side, the transparent plastic sheet effectively transmits a view of the background [sky, clouds (shown at 40 in Figure 3)]. Also, as seen from Figure 1, the keel is essentially invisible when viewed from directly beneath it, since it transmits a view of the underside of the lift surface to a ground observer. Thus, it creates the visual impression that the Figure 24 is free floating, or hang gliding below the lift body.

The significance of the invention resides in the visual impression it creates when the kite is in flight. The figure appears to be floating or hang gliding beneath the lift surface, thus providing a unique and pleasing appearance to a ground observer. In the preferred embodiment, the lift body has a configuration similar to that of a hang glider wing, so that when it is used with a flexible camouflaged coupling and a hull which depicts a human figure, it creates a unique visual impression of the figure hang gliding below the lift body.

Moreover, it is believed that the depending keel and hull have a stabilizing effect on the kite, and also enhance the aerodynamic lift characteristics of the kite. Specifically, the keel and hull separate oncoming air flow, and direct it outwardly toward the ends of the lift body, which enhances the lift of the kite.

As discussed above, according to the preferred embodiment the camouflaging between the hull and the lift body is preferably provided by a sheet of transparent flexible material. However, other forms of camouflaged couplings are within the spirit of this invention. For example, a coupling with a sky-gray coloring, or, a coloring which can change in accordance with available light and background conditions to camouflage itself against the sky would obviously be a suitable coupling. Similarly, a series of thin coupling strips could form the flexible keel, rather than a continuous sheet, to camouflage the coupling.

Additionally, the invention contemplates a kite structure which may allow changing the figure supported by the kite. For example, rather than adhesively bonding the figure to the flexible keel, a series of clamps or other mechanical devices could

releasably couple the hull to the keel. With such a construction, a hull in the form of one type of figure or object could be replaced by a hull in the form of another type of figure or object.

With the foregoing disclosure in mind, it is believed that various obvious modifications will become readily apparent to those of ordinary skill in the art.

75 CLAIMS

1. A kite comprising a lift body including lift surface with portions extending laterally and in opposite directions from a longitudinal central strut, a flexible keel having a proximal end connected with said lift body and a distal end portion spaced from said lift body, said flexible keel being connected to said lift body so that when said kite is in flight said flexible keel depends downwardly from said lift body, a hull rigid material connected with the distal end portion of said flexible keel so that said hull can depend downwardly from said flexible keel when said kite is in flight, said hull being formed to depict an object or image, and said flexible keel being camouflaged to minimize its visibility to a ground observer when the kite is in flight, so that the image or object on the hull appears to a ground observer to float freely beneath said lift surface as the kite is in flight.
2. A kite as set forth in claim 1 wherein said keel comprises a sheet of transparent material which allows the sky and other background to be viewed therethrough when the kite is in flight, and thereby minimizes its visibility to a ground observer.
3. A kite as set forth in claim 2 wherein said sheet of transparent material has a proximal end formed into a sleeve for surrounding the central strut and a distal end disposed to hang from the central strut for supporting the hull when the kite is in flight.
4. A kite as set forth in any of claims 1, 2 or 3 wherein said hull comprises a rigid planar member configured into the outer form of the object or image and having opposite major side surfaces bearing indicia forming a part of the object or image being depicted.

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